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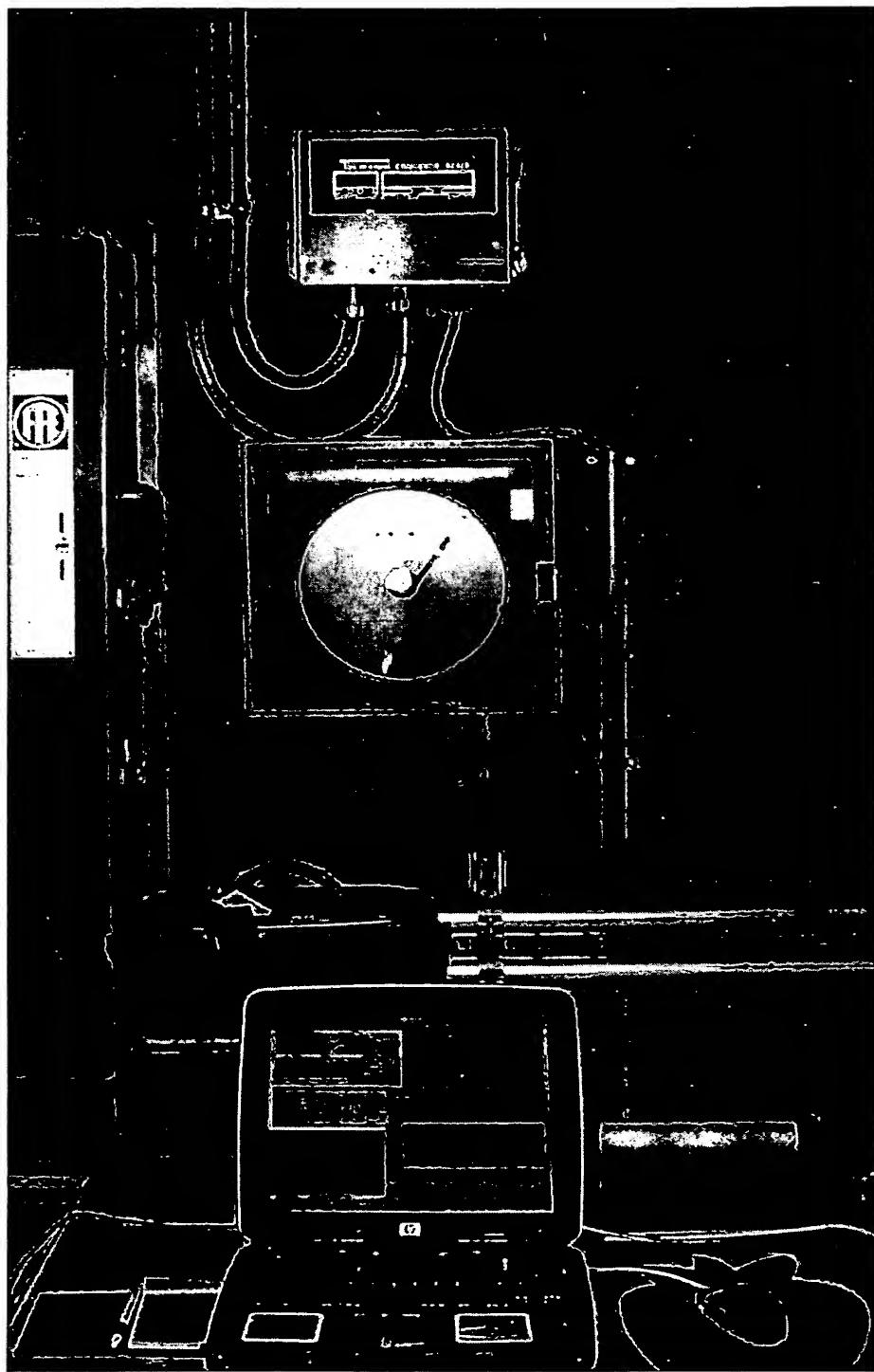
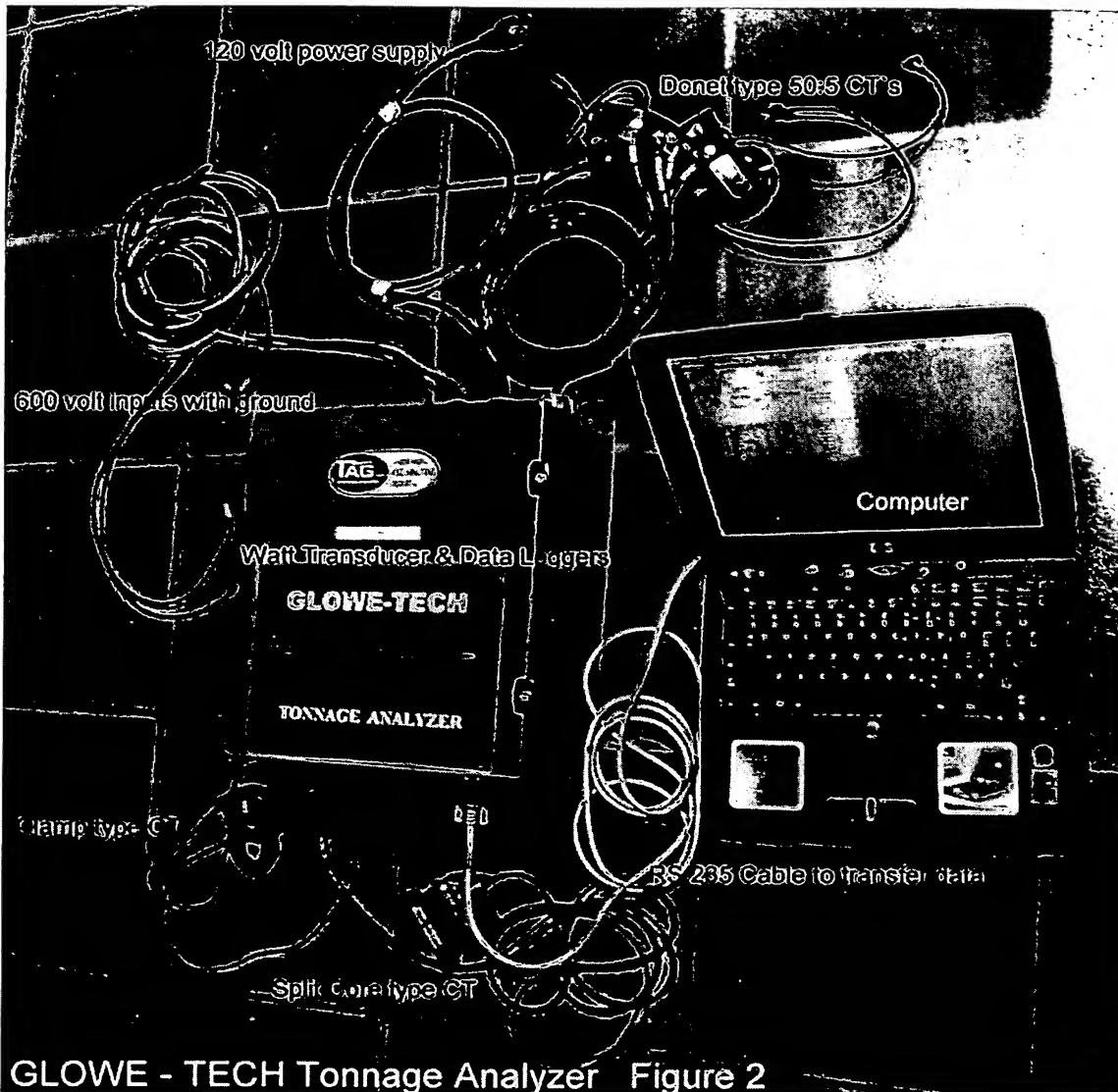


FIGURE 1

Typical set-up with computer recording live data converted to tonnage with belt scale monitor (top unit) showing actual tonnage moving over conveyor

FIGURE: 2



GLOWE - TECH Tonnage Analyzer Figure 2

- Item 1: 600 volt input wires for line 1, 2 & 3 for watt transducer & ground wire
- Item 2: Donut type 50:5 CT's for current input to watt transducer
- Item 3: 120 volt power supply wire for watt transducer
- Item 4: Clamp type CT for ampere method to collect data for tonnage conversion
- Item 5: Split-Core CT for ampere method to collect data for tonnage conversion
- Item 6: Instrument case with Watt Transducer installed
- Item 7: Instrument case with ACR Data logger installed
- Item 8: RS235 Cable to transfer data to computer
- Item 9: Lap-top computer to collect data
- Item 10: Screen showing live data and for display of Real-Time graph of data in Tonnes converted from kilowatts or amps

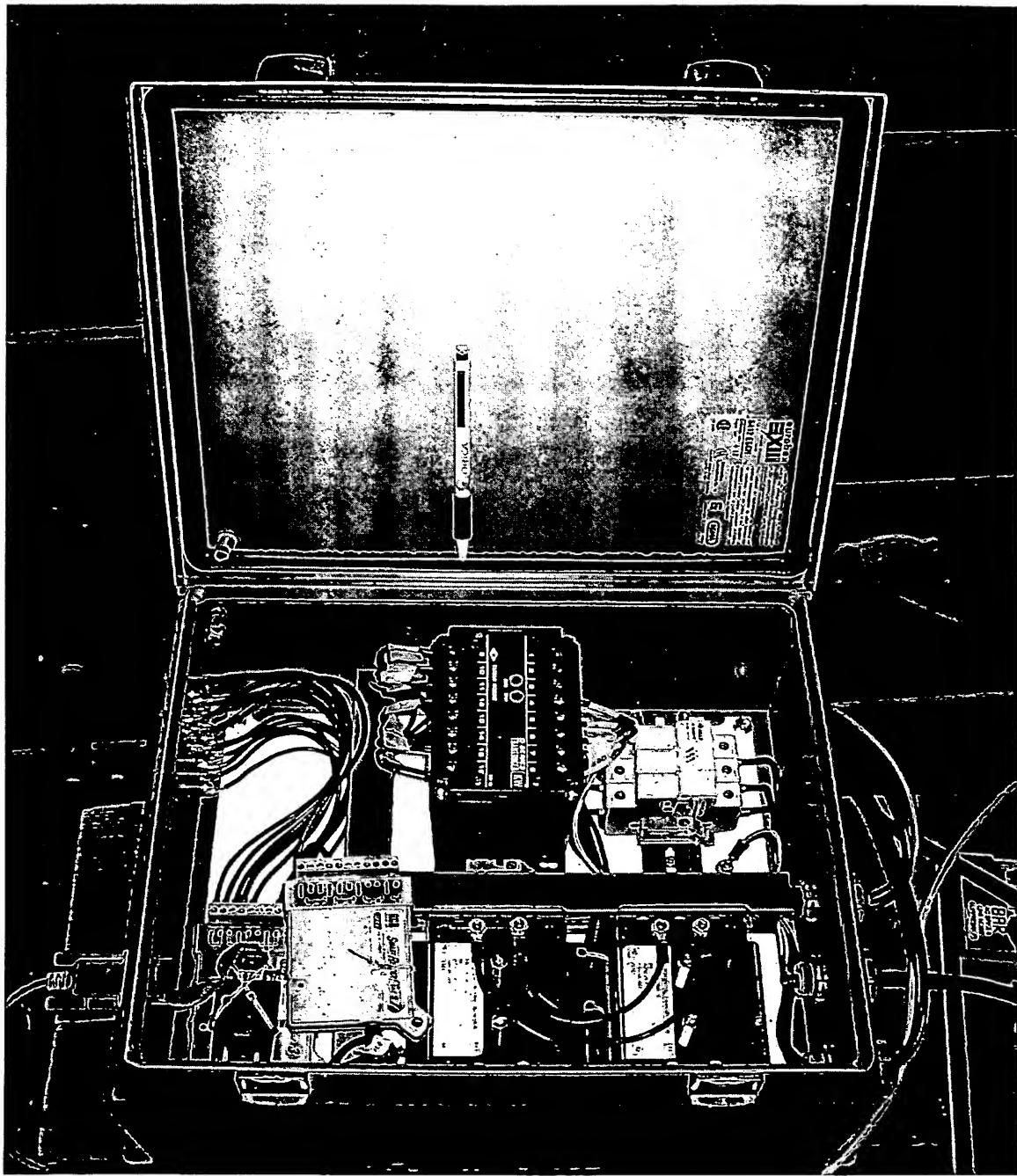


FIGURE 3:

GLOWE-TECH Tonnage Analyzer – Portable model with 2 Data Loggers capable of monitoring up to a total of 14 conveyor motors

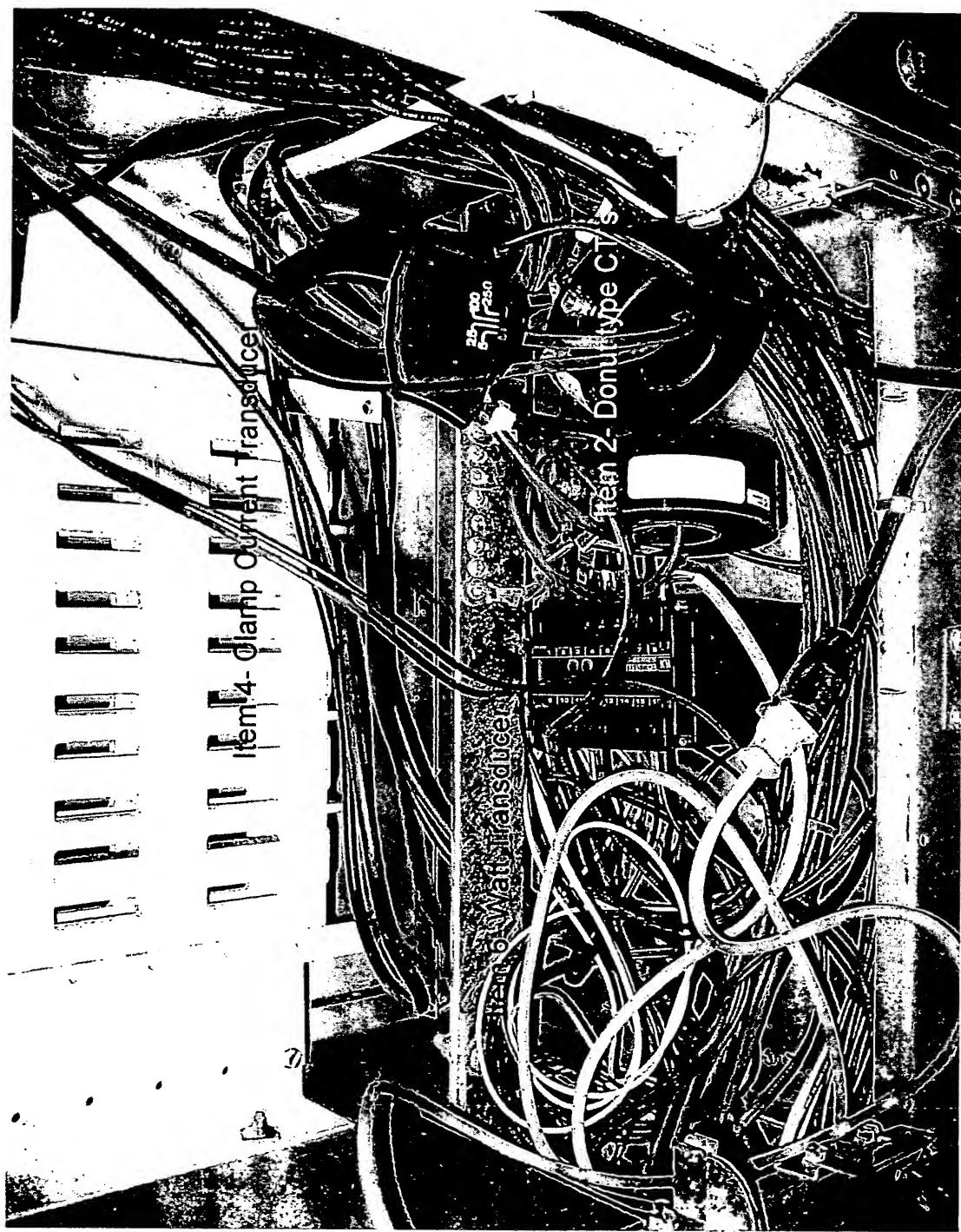


FIGURE 3b: Watt Transducer installation for Typical Conveyor Motor showing Clamp CT installed too

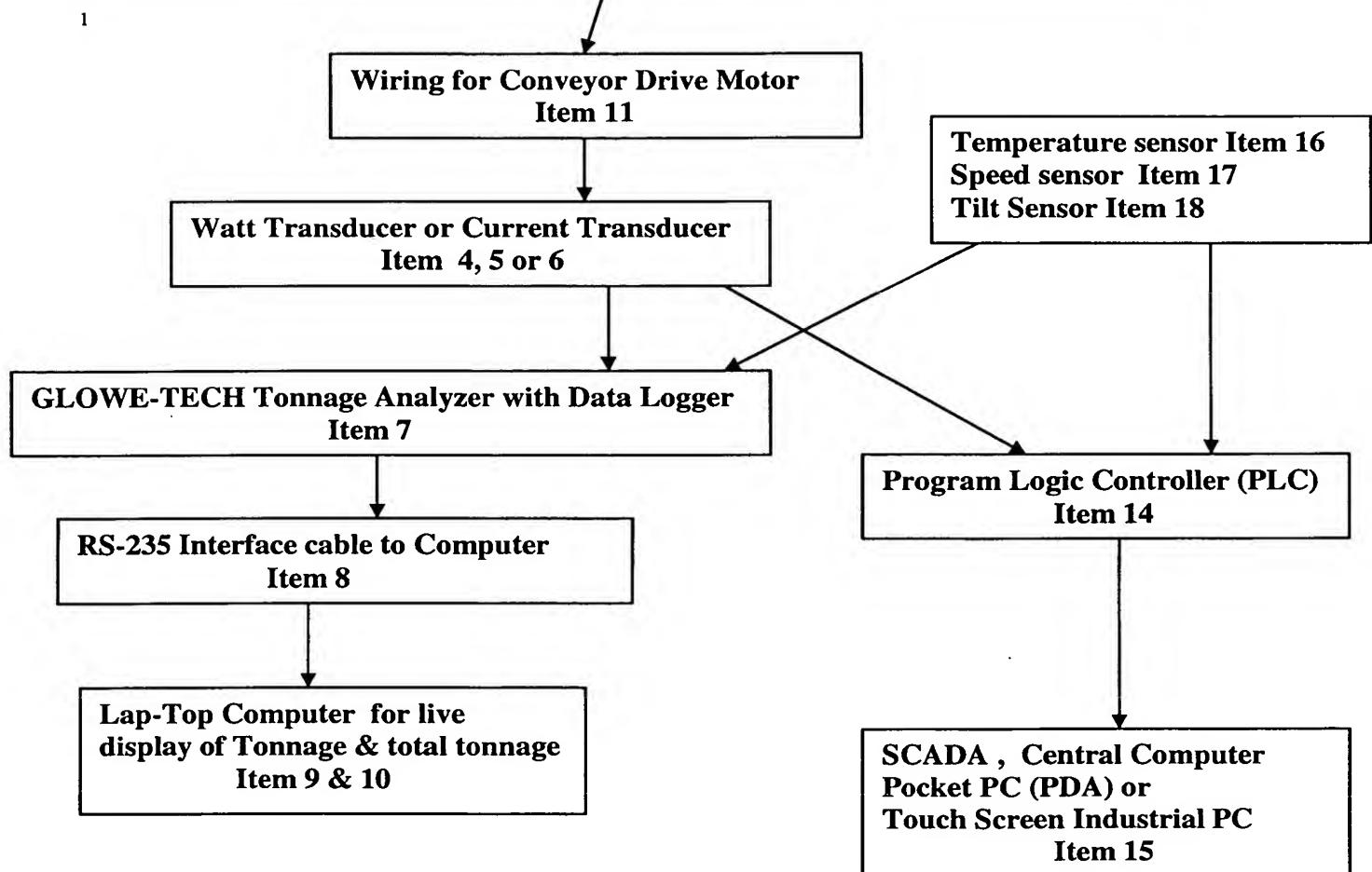
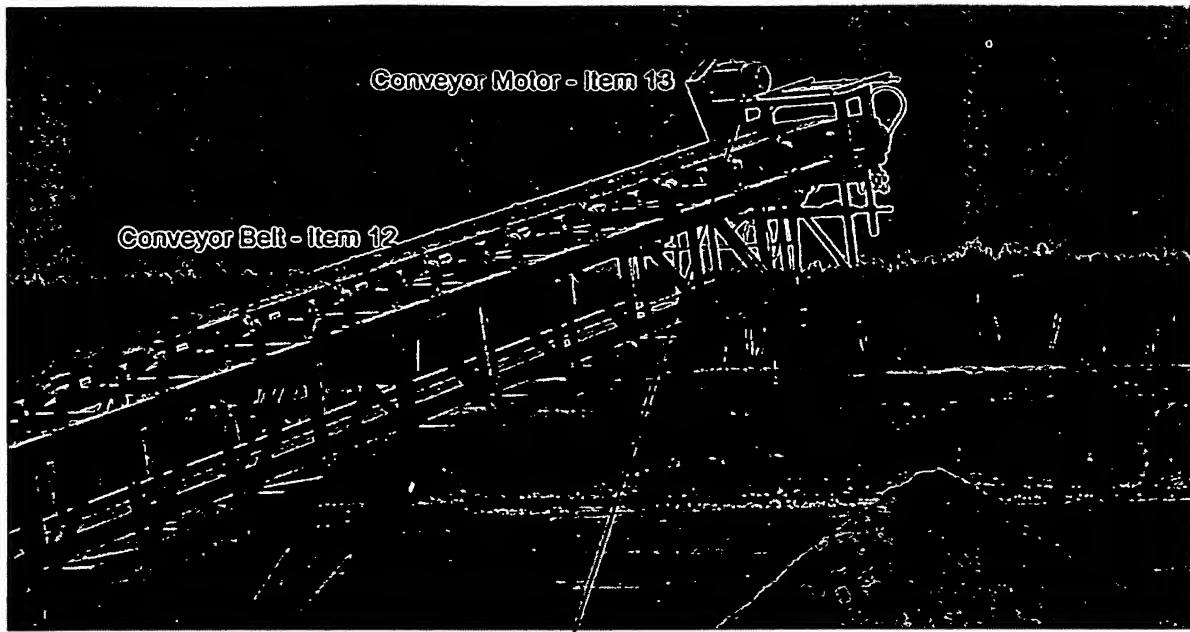


FIGURE: 4 Schematic of Typical Conveyor Belt Motor Tonnage Conversion

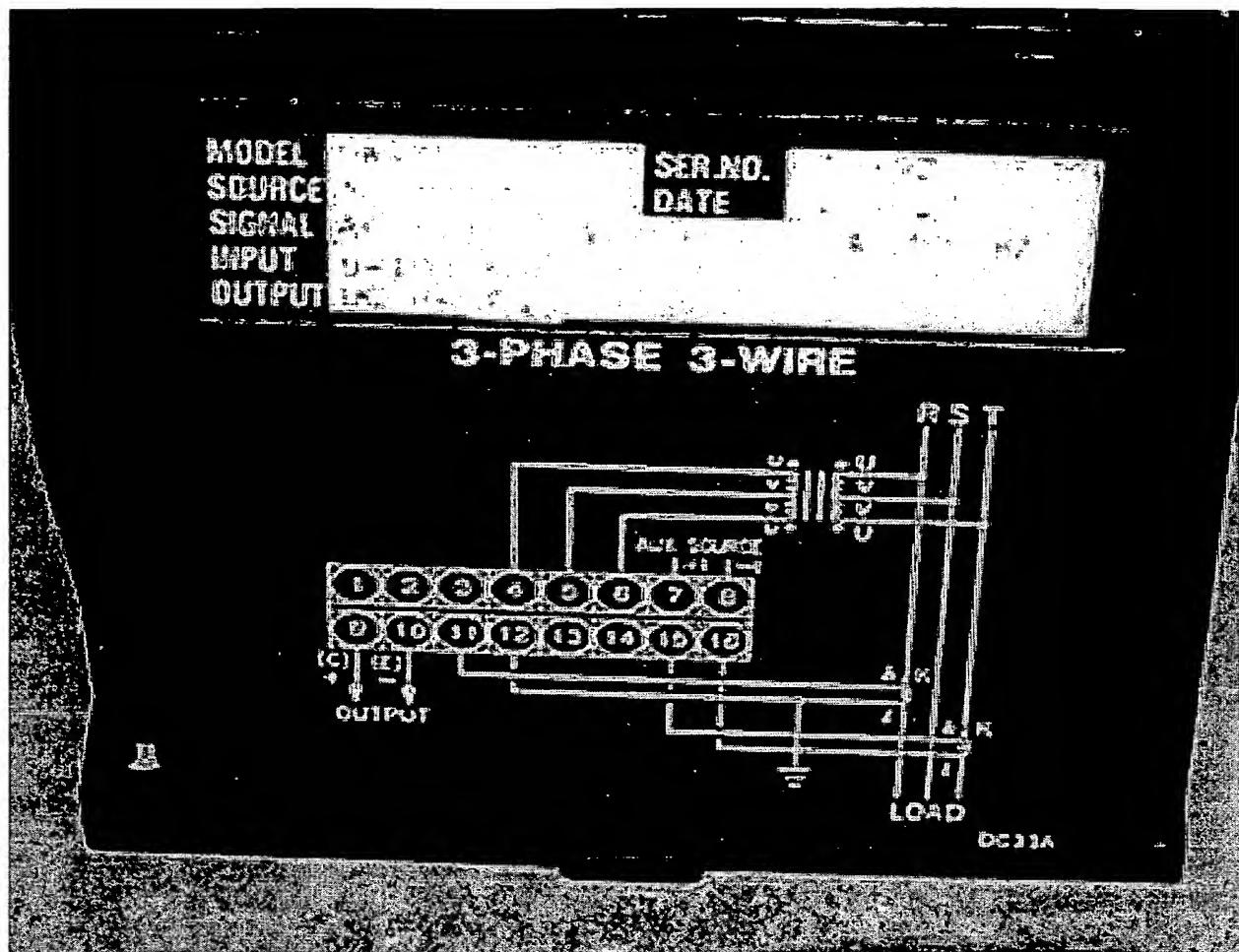
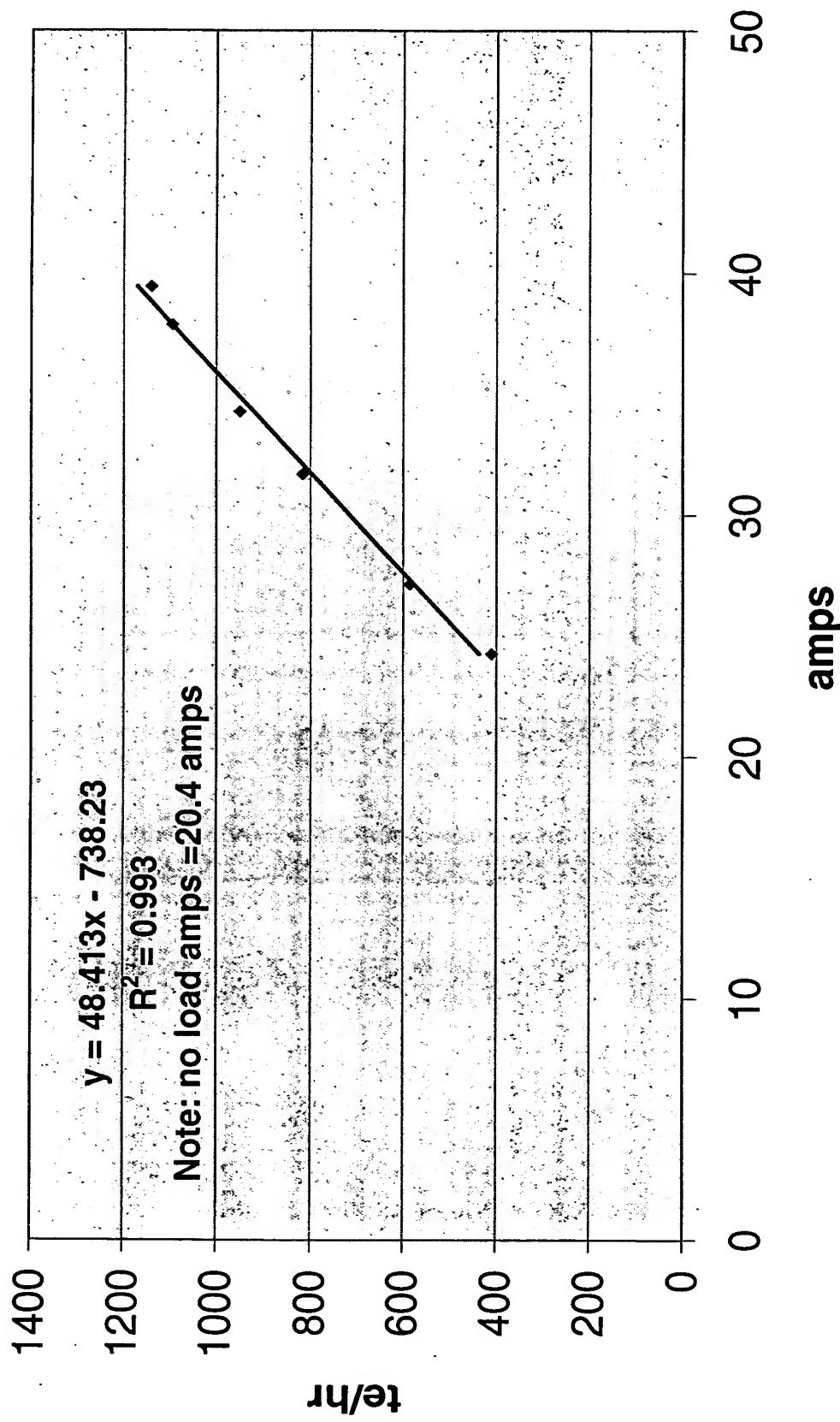


FIGURE: 5

GLOWE-TECH Typical wiring diagram for Watt Transducer

Graph amps to tonnes Figure: 6



Kwatts to tonnes Figure 7

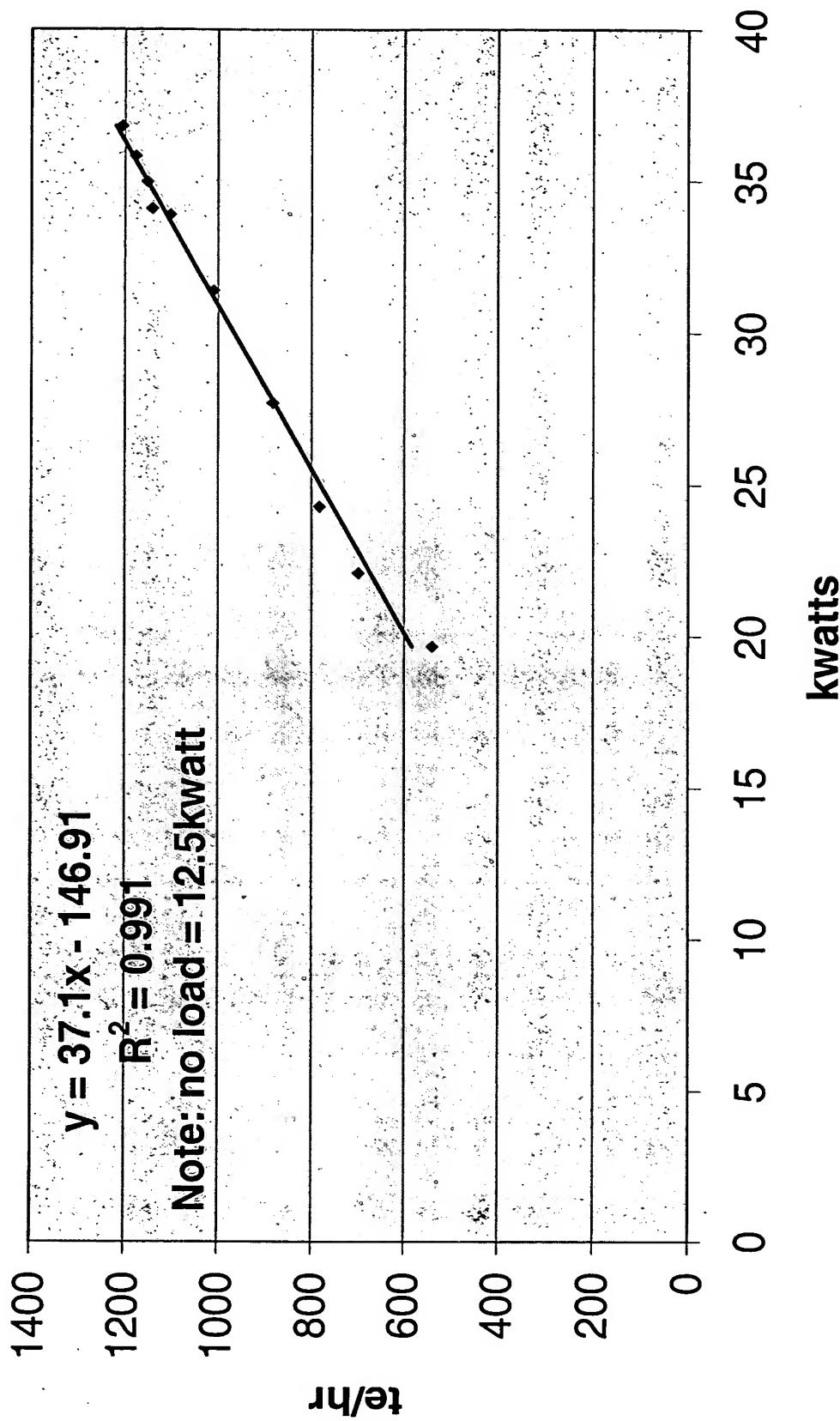


FIGURE: 8

Summary of Tonnage for Typical Conveyor using kwatts to tonnes

Date	Truck Count	actual Belt Scale tonnes	Corrected Belt Scale tonnes	kwatts conversion to tonnes	difference tonnes	amps conversion to tonnes	difference tonnes
15-Apr	126	6474.10	6474.10	6470.914	3.19	0	0
16-Apr	185	9552.40	9552.40	9404.079	148.32	9676.29	-123.89
17-Apr	145	7730.90	7730.90	7499.33	231.57	7753.309	-22.41
18-Apr	180	9451.50	9539.50	9412.356	127.14	9638.428	-98.93
19-Apr	166	8560.00	8665.00	8553.628	111.37	8737.455	-72.45
22-Apr	173	9138.00	9386.15	9447.105	-60.96	9465.383	-79.24
23-Apr	197	10453.00	10692.49	10717.322	-24.84	10323.369	369.12
24-Apr	159	7982.00	7982.00	8125.574	-143.57		
25-Apr	163	3705.00	3738.90	3773.876	-34.98		
26-Apr	164	8537.00	8757.00	8933.782	-176.78		
29-Apr	149	8150.00	8346.70	8418.175	-71.47		
30-Apr	156	8272.00	8482.00	8504.899	-22.90		
1-May	191	9901.00	10123.00	10138.142	-15.14		
2-May		10552.90	10758.00	10777.447	-19.45		
TOTAL		118459.80	120228.13	120176.629	51.50		

**NOTE: Belt Scale tonnage was corrected for tonnage being added from April 18 to April 24th
then taking off tonnage due to removal of rock end April 24 which had fallen on belt scale**

NOTE: Apr 24 to May 2 scale was taking tonnes from scale display at 15 to 25 te/hr

NOTE:kwatt calibration formula used as per graph is $37.1x - 146.91$ for all readings April 15 to May 2

NOTE: Amp calibration formula used as per graph is $48.413x - 738.13$ for all readings

FIGURE 8b**Comparison Table showing difference in GLOWE-TECH Tonnage Analyzer Readings with Milltronics Belt Scale Readings**

Date	Operating Time hours	No-Load time hours	Start-Up time hours	Production time-hours	Milltronics tonnes	GT Analyzer tonnes	Difference tonnes	Difference %
6-May-02	7.367	1.813	0.064	5.490	2830.000	2769.730	60.270	2.13
7-May-02	10.930	2.176	0.196	8.558	4374.000	4377.165	-3.165	-0.07
8-May-02	7.117	1.796	0.027	5.294	2791.000	2776.820	14.180	0.51
9-May-02	6.830	1.187	0.116	5.527	3119.500	3096.503	22.997	0.74
10-May-02	10.650	1.242	0.044	9.364	4494.000	4531.777	-37.777	-0.84
13-May-02	10.430	7.158	0.007	3.265	1845.900	1888.235	-42.335	-2.29
14-May-02	8.817	5.402	0.031	3.384	1866.000	1866.000	0.000	0.00
15-May-02	10.867	1.502	0.080	9.285	4659.000	4680.243	-21.243	-0.46
16-May-02	11.033	2.380	0.011	8.642	4563.000	4582.861	-19.861	-0.44
17-May-02	9.067	1.620	0.009	7.438	3799.000	3761.421	37.579	0.99
20-May-02	8.967	1.389	0.009	7.569	3792.000	3791.384	0.616	0.02
21-May-02	10.883	1.778	0.009	9.096	4226.000	4199.993	26.007	0.62
22-May-02	10.750	1.620	0.138	8.992	3925.000	3921.740	3.260	0.08
23-May-02	7.880	1.311	0.009	6.560	3261.000	3206.395	54.605	1.67
TOTAL	131.588	32.374	0.750	98.464	49545.400	49450.267	95.133	

Note: Data taken from a conveyor belt feeding a secondary crusher.

Note: Potential of up to 33.124 hours of new production available in recording period.

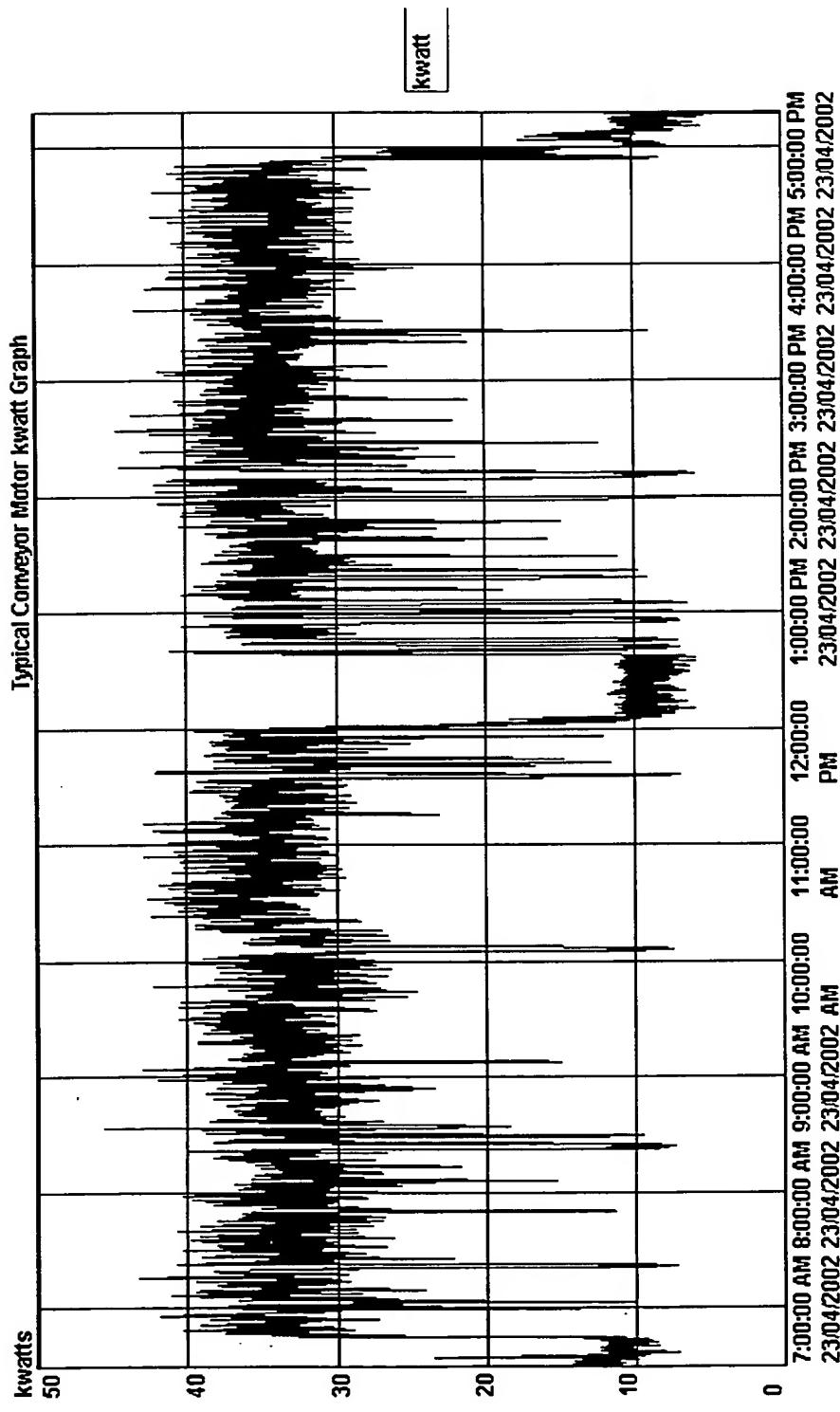


FIGURE: 9 kilowatt graph

FIGURE 10

TYPICAL Quarry Kwatts Converted to Tonnage Summary report

Temperature am	10.000 Degrees Celcius							
Temperature pm	17.000 Degrees Celcius							
No load kwatt =	13.600							
Start up kwatts =	21.000							
Time No-Load kwatt	134.533 minutes							
Time Start-Up kwatts	1.067 minutes							
Total Production time	11.676 hours							
Average kwatt for day	17.308 kwatts							
Average Tonnage by formula	555.233 te/hr							
Actual Scale Reading								
Total tonnage by GT analyzer =								
difference								
Time of data Reading	Actual Kwatt Reading	Count	Count	Over-load	Conditioned kwatt	tonnes/hour on conveyor	tonnes/hour on conveyor	Tons/hr on conveyor
28/02/2003 6:00:05	0.1464615	1	0	0	0	-25.057	5237.943 tonnes	5237.696 tonnes totalized
28/02/2003 6:00:13	0.1708718	1	0	0	0	-25.3040 tonnes		
28/02/2003 6:00:21	0.1464615	1	0	0	0			
Break								
28/02/2003 17:39:17	17.45333	0	0	0	0	17.453	564.102	1.254
28/02/2003 17:39:25	17.89272	0	0	0	0	17.893	590.888	1.313
28/02/2003 17:39:33	17.25805	0	0	0	0	17.258	552.198	1.227
28/02/2003 17:39:41	17.33128	0	0	0	0	17.331	556.662	1.237
28/02/2003 17:39:49	17.136	0	0	0	0	17.136	544.758	1.211
28/02/2003 17:39:57	15.57374	0	0	0	0	15.574	449.521	0.999
28/02/2003 17:40:05	14.7682	0	0	0	0	14.768	400.414	0.890
28/02/2003 17:40:13	14.42646	0	0	0	0	14.426	379.581	0.844
28/02/2003 17:40:21	13.66974	0	0	0	0	13.670	333.451	0.741
28/02/2003 17:40:29	13.03508	1						

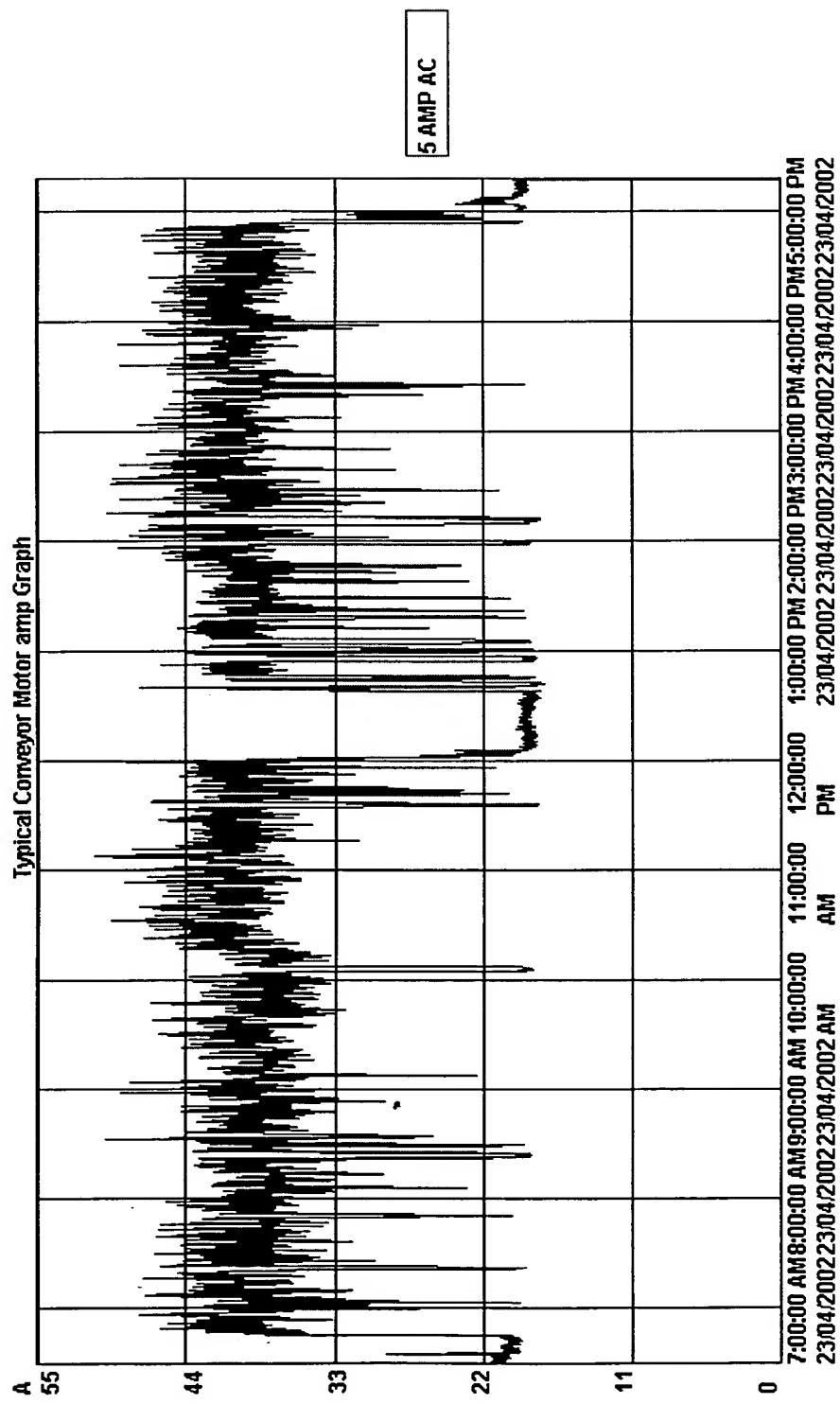


FIGURE: 11 amp Graph

TYPICAL Quarry Amps to tonnage Summary

Temperature am
Temperature pm

No load current = 25.000
Start up current = 80.000

Time no load amps
Time at start-up amps
Total Recording Time
Average current for day =
Average Tonnage by formula =
Total tonnes by Instrument
Total tonnes by scale
Difference

69.33 mlnutes
5.87 mlnutes
11.709 hours
66.787
9.000
15.000
25.000
80.000

No load current =
Start up current =
1.156 hours
0.098 hours
10.553
496.592
5240.756
5184.000
-56.756 tonnes

degrees C
degrees C

Count >
Time of reading
Actual Amps
Count no
load Amps
Conditioned
Amps
Tons/ hour on
conveyor

Time of reading	Actual Amps	Count no load	Count > startup	Conditioned Amps	Tons/ hour on conveyor	Tons/hr on conveyor
12/02/2003 6:00:04	20.30774	1	0	0	60.226	428.974
12/02/2003 6:00:12	20.26378	1	0	0	59.259	419.006
12/02/2003 6:00:20	20.26378	1	0	0	60.710	433.959
BREAK						
12/02/2003 17:41:00	60.22648	0	0	0	60.007	426.709
12/02/2003 17:41:08	59.25929	0	0	0	56.314	388.646
12/02/2003 17:41:16	60.71008	0	0	0	52.797	352.395
12/02/2003 17:41:24	60.00667	0	0	0	46.774	290.316
12/02/2003 17:41:32	56.31374	0	0	0	42.993	251.347
12/02/2003 17:41:40	52.79667	0	0	0	37.453	194.253
12/02/2003 17:41:48	46.77369	0	0	0	32.530	143.502
12/02/2003 17:41:56	42.99284	0	0	0	27.606	92.752
12/02/2003 17:42:04	37.45346	0	0	0	0	0
12/02/2003 17:42:12	32.52956	0	0	0	0	0
12/02/2003 17:42:20	27.60566	0	0	0	0	0
12/02/2003 17:42:28	24.57219	1	0	0	0	0

FIGURE 12

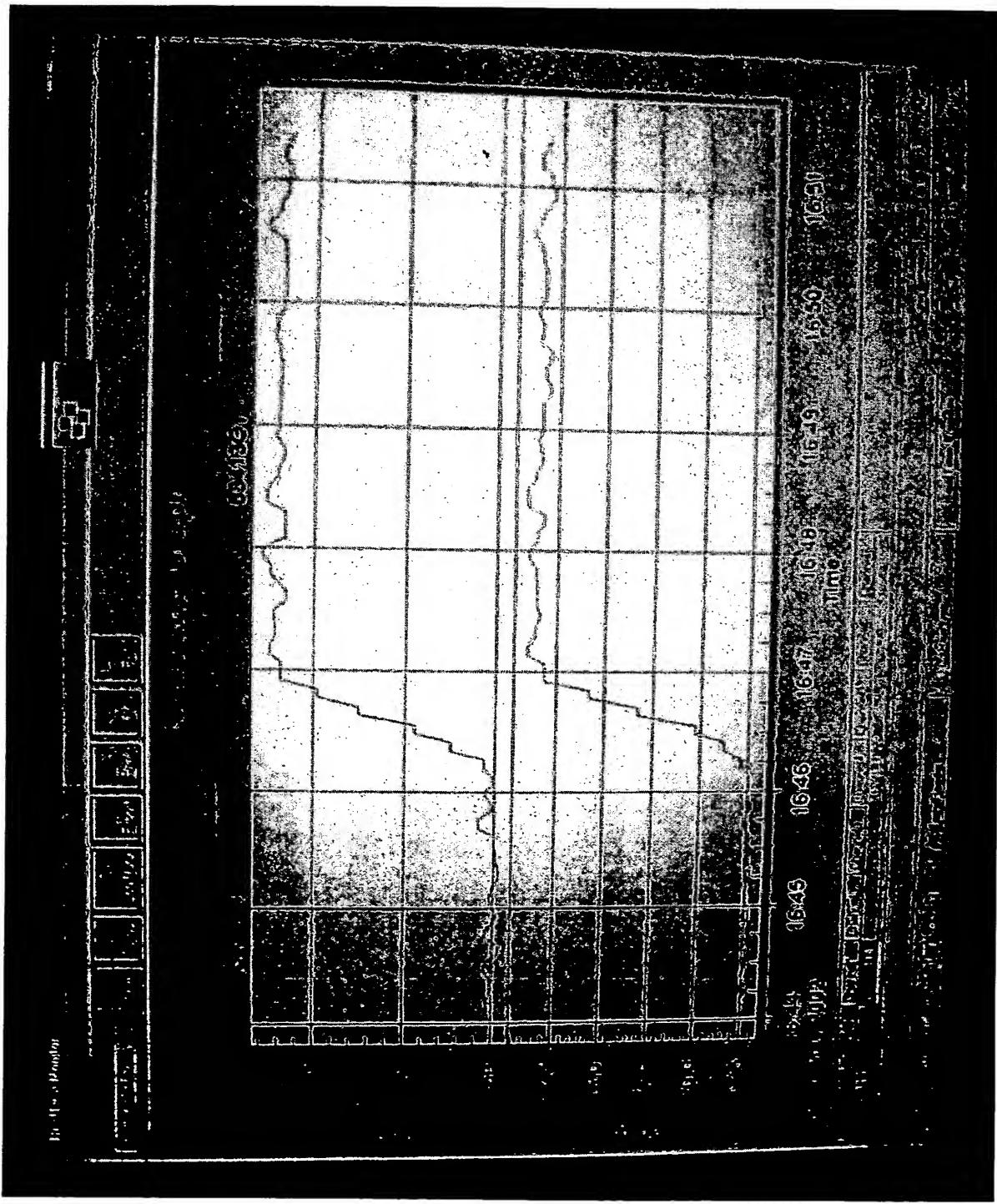


FIGURE 13a: - Typical Real Time Graph showing te/hr converted from Watt Transducer and a Real Time Graph of Amperage readings from the same Conveyor motor for parallel conversion to Tonnage for demonstration purposes.

	A	B	C	D	E	F	G	H	I	J	K
1 Typical Daily conversion kilowatts to tonnes Aug 6, 2003											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
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1593											
1594											
1595											
1596											
1597											
1598											
1599											
1600											
1601											
1602											
1603											
1604											
1605											
1606											
1607											
1608											

Figure 13b Typical Daily Summary Table with Stable No-Load reading

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Patent Application Re...

start

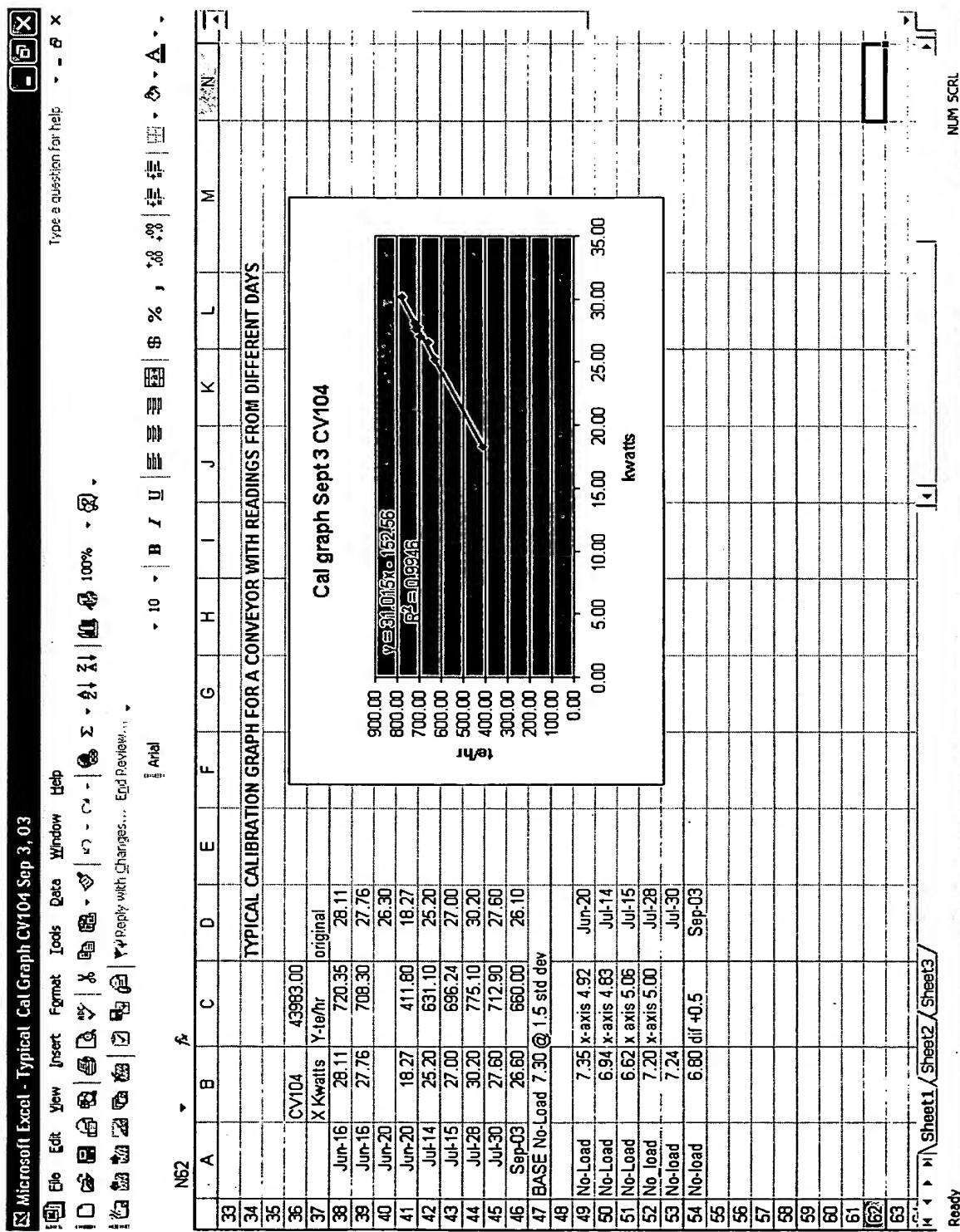
Figure 13c Calibration Re...

Microsoft Excel - Figu...

Figure 13c Calibration Re...

Close Full Screen

11:03 AM



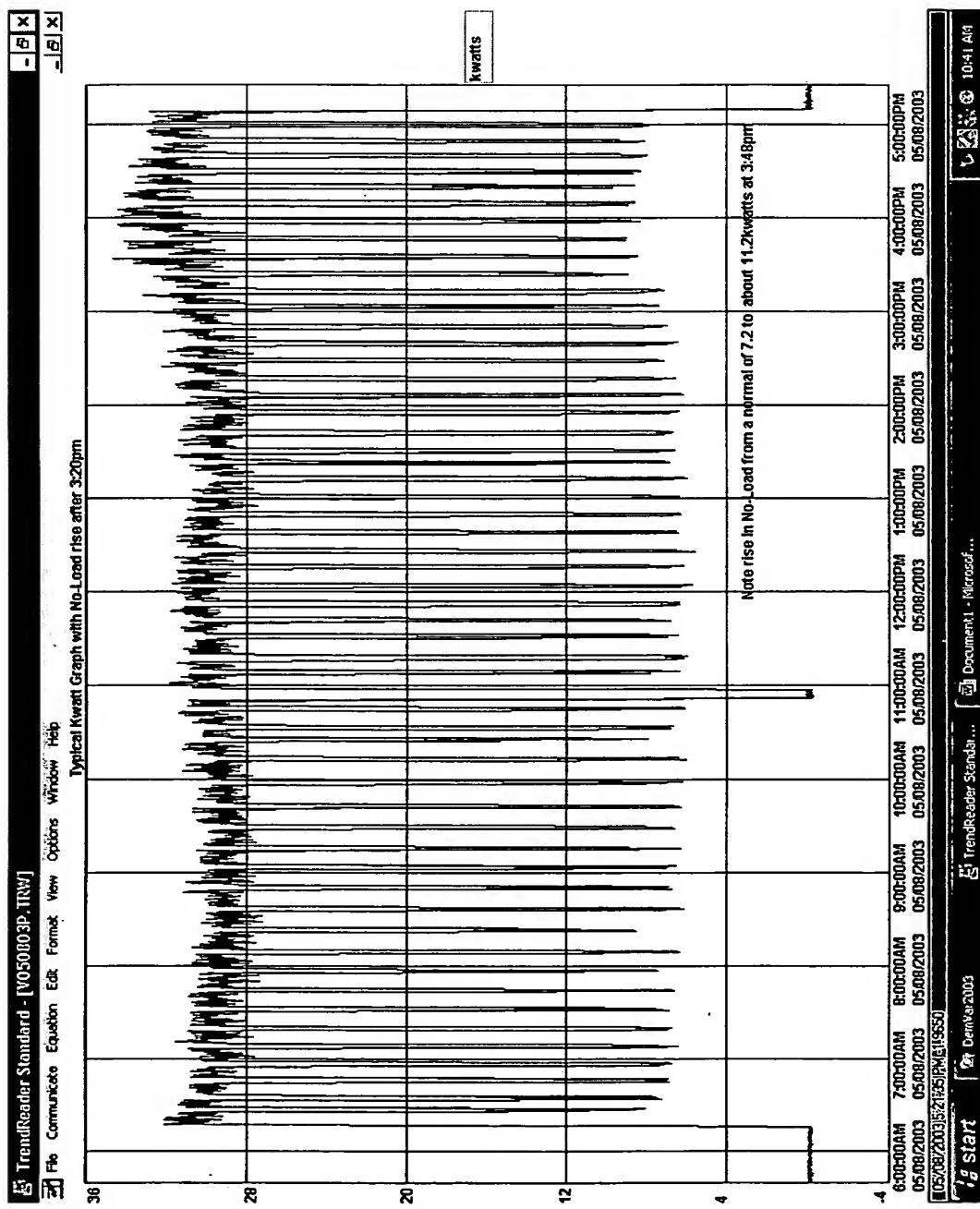


FIGURE 13d Typical Kilowatt Graph showing effect of change in No-Load caused by Friction on return side of Conveyor

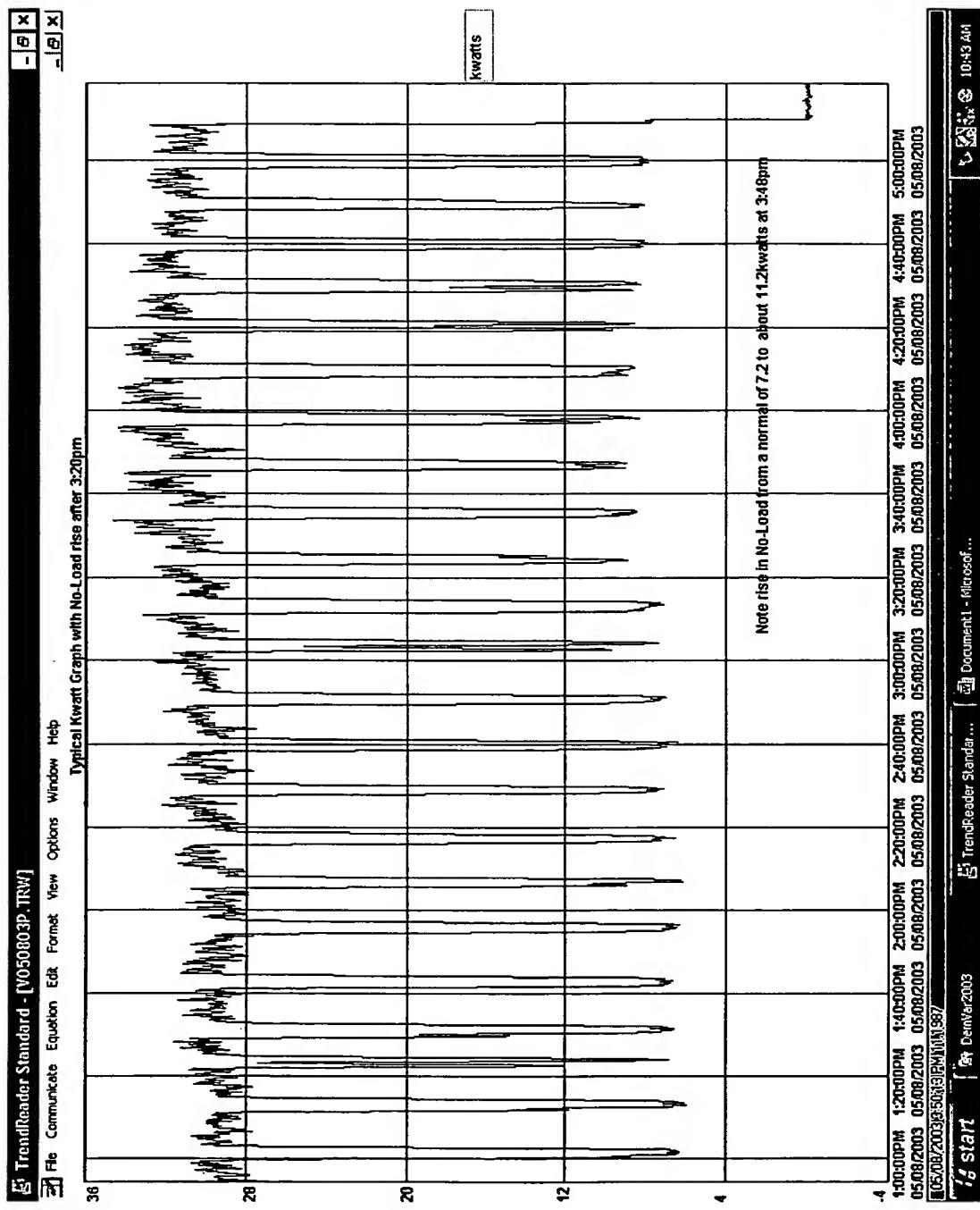


Figure 13e Enlarged view of change in No-Load readings caused by friction on Return Conveyor belt

	A	B	C	D	E	F	G	H	I	J	K
Figure 13f Typical Daily summary with No-Load Adjustment											
2											
3											
4	No load kwatt	Motor	10.834	kwatts	639.613	Aug-18					
5	Peak kwatts		35.000	kwatts	633.630	Sep-15					
6	Time No-Load kwatt		97.867	minutes	1.631	heures					
7	Time StartUp kwatts		0.000	minutes	0.000	heures					
8	Total Production time		10.89	hours	9.259	heures					
9	Average kwatt for day	Motor	28.189	kwatts	No-load Original reading		7.300	kwatts			
10	Average Tonnage by formula		593.534	t/hre	New No-load reading		10.834	kwatts			
11					599.534	New Formula					
12	Tonnage by belt scale		5573.000	tonnes est							
13	Total tonnage by GT analyzer =		55514.023	tonnes	6574.303	tonnes based on original formula					
14	Difference		21.977	tonnes	-1001.303	tonnes difference					
15	Percentage difference		0.394	%	-7.967	%					
16	Time of data	Actual Kwatt	Count	Conditioned tonnes/m on conveyor	No-Load Time	Reading					
17	Reading	Reading	No-Load	Peak Load	kwatt	totalized					
18	05/08/2003 16:16:26	-0.07618	1	0	10.842	0.400	05/08/2003 15:46:18	9.711	Average kw		
19	05/08/2003 16:16:34	10.84231	0	0	179.824	0.400	05/08/2003 15:46:26	9.026	Std dev		
20	05/08/2003 16:16:42	12.55725	0	0	231.932	0.515	05/08/2003 15:46:34	9.41319	-10.834	1.5 std dev	
21	05/08/2003 16:16:50	14.48160	0	0	14.482	0.645	05/08/2003 15:46:42	10.15633	11.208	2.0 std dev	
22	05/08/2003 16:16:58	17.18760	0	0	17.188	0.828	05/08/2003 15:46:50	11.26152			
4905	05/08/2003 17:08:10	32.73644	0	0	32.736	845.077	1.878				
4906	05/08/2003 17:08:18	32.05952	0	0	32.070	824.812	1.833				
4907	05/08/2003 17:08:26	22.89179	0	0	32.992	847.972	1.894				
4908	05/08/2003 17:08:34	29.09694	0	0	29.097	734.491	1.632				
4909	05/08/2003 17:08:42	26.23870	0	0	26.239	647.643	1.439				
4910	05/08/2003 17:08:50	22.02756	0	0	22.028	519.687	1.155				
4911	05/08/2003 17:08:58	15.75898	0	0	15.758	379.201	0.732				
4912	05/08/2003 17:08:06	11.45207	0	0	11.452	198.351	0.441				
4913	05/08/2003 17:09:14	7.88879	1	0							
4914	05/08/2003 17:09:22	7.75541	1	0							
4915	05/08/2003 17:09:30	7.73535	1	0							
4916	05/08/2003 17:09:38	8.07934	1	0							
4917	05/08/2003 17:09:46	7.68013	1	0							
4918	05/08/2003 17:09:54	7.77446	1	0							
4919	05/08/2003 17:10:02	0.00004	1	0							
4920											
4921											
4922											

Figure 13f Daily Summary Showing Impact of No-Load Adjustment due to dirt build up at 3:20pm

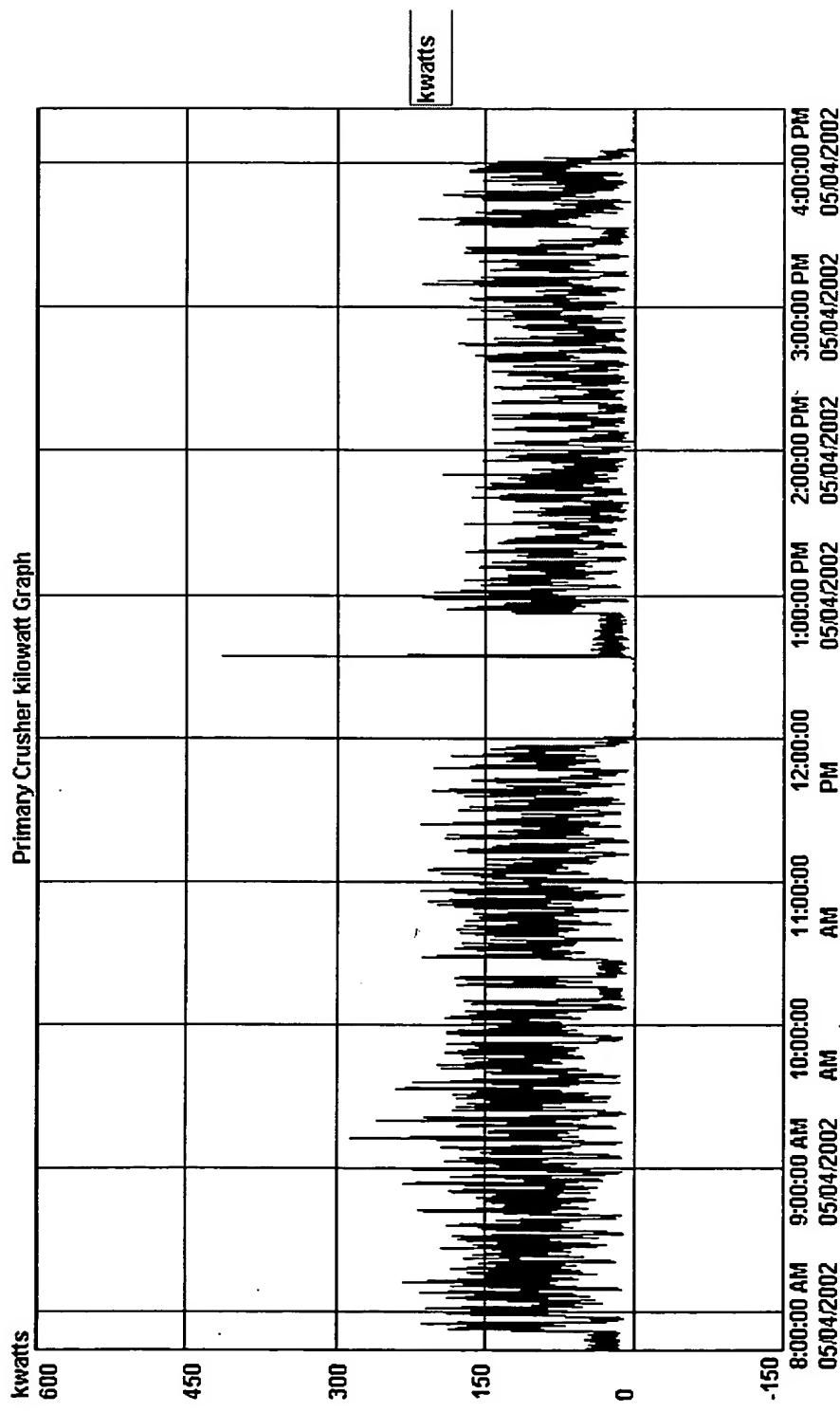


Figure 14: Typical Primary Crusher Graph

FIGURE 15

Typical Primary Crusher kwatt report

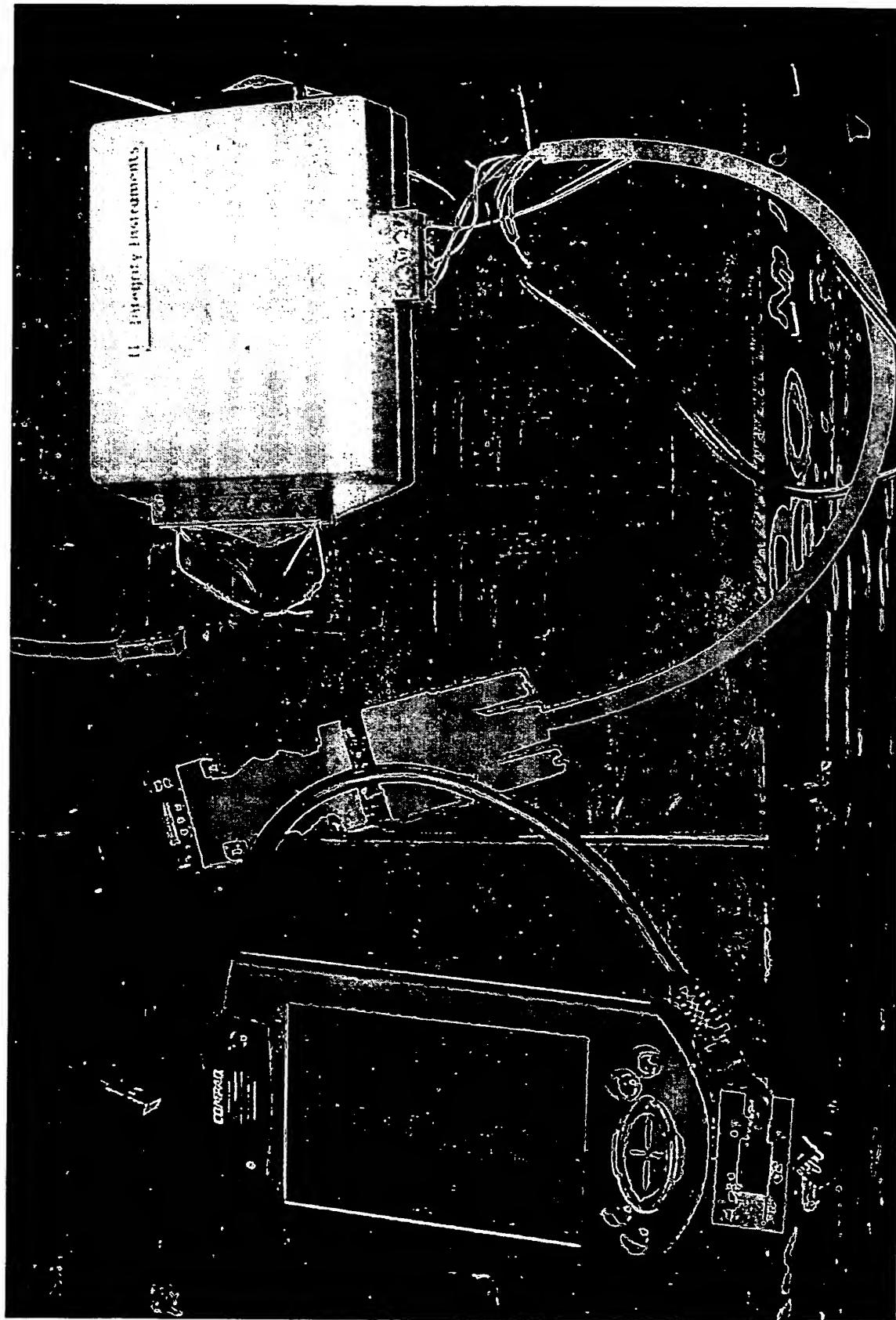
No load kwatt =	30.000 kwatts
Start up kwatts =	410.000 kwatts
Time No-Load kwatt	144.400 minutes
Time Start-Up kwatts	2.407 hours
Total production time 10 hrs 23 min	0.133 minutes
	10.383 hours
Total tonnes on Primary Conveyor Belt Scale	7.974 hours actual
Average kwatt for day	7713.0 tonnes
Total kwatts crushing	91.785
Total te/kwatt crushed	731.906 kwatts
	10.538 te/kwatt

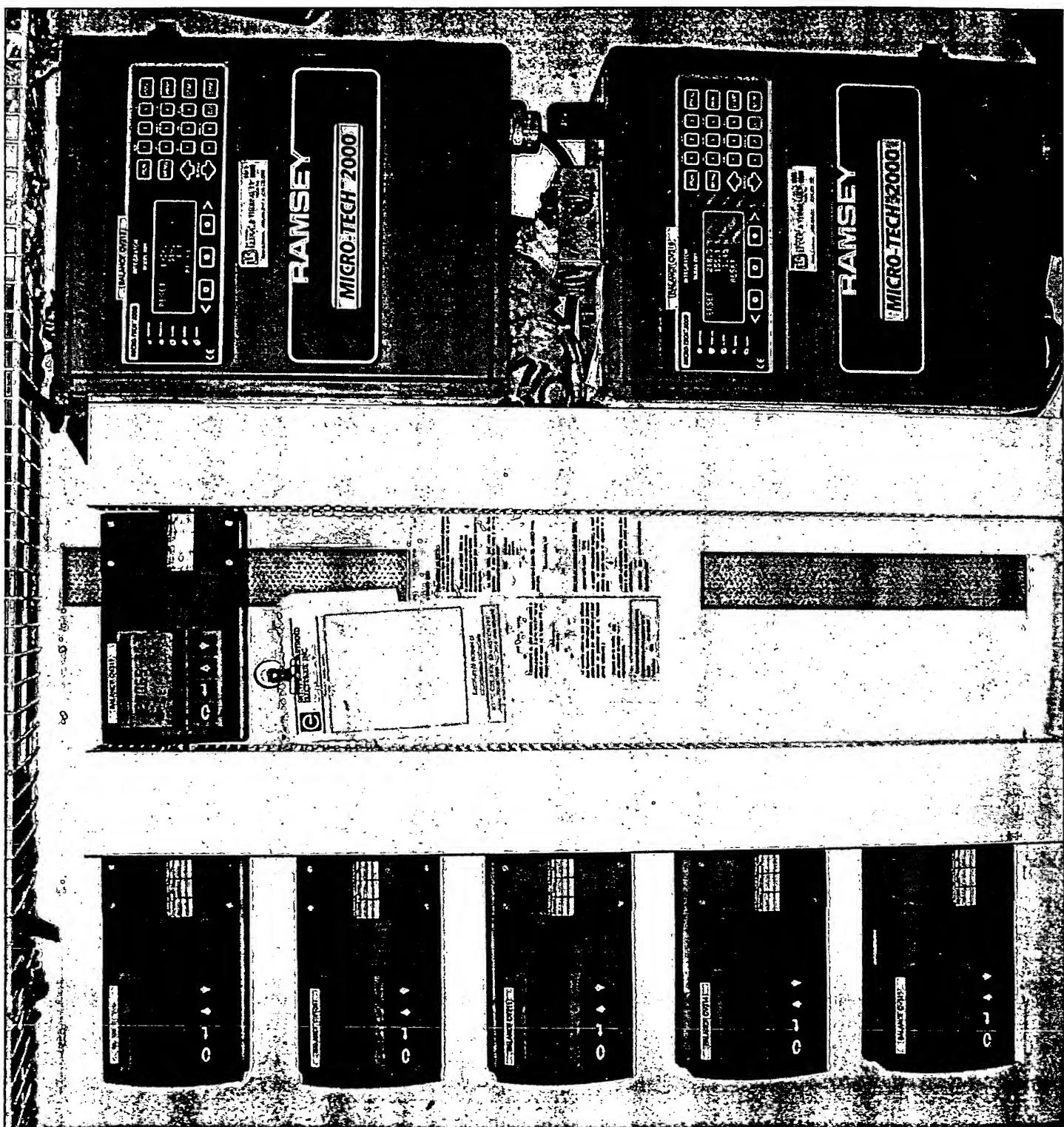
Time of data Reading	Actual Kwatt	Count No-Load	Count Over-load	Conditioned kwatt
05/04/2002 7:24:33	0.811	1	0	
05/04/2002 7:24:41	4.358	1	0	
05/04/2002 7:24:49	1.520	1	0	
05/04/2002 7:24:57	0.811	1	0	
05/04/2002 7:25:05	0.811	1	0	
05/04/2002 7:25:13	2.027	1	0	
05/04/2002 7:25:21	2.939	1	0	
05/04/2002 7:25:29	3.851	1	0	
05/04/2002 7:25:37	2.230	1	0	
05/04/2002 7:25:45	3.243	1	0	
05/04/2002 7:25:53	1.317	1	0	
05/04/2002 7:26:01	2.331	1	0	
05/04/2002 7:26:09	2.939	1	0	
05/04/2002 7:26:17	1.013	1	0	
05/04/2002 7:26:25	0.811	1	0	
05/04/2002 7:26:33	1.926	1	0	
05/04/2002 7:26:41	2.534	1	0	
05/04/2002 7:26:49	1.115	1	0	
05/04/2002 7:26:57	0.811	1	0	
05/04/2002 7:27:05	0.811	1	0	
05/04/2002 7:27:13	0.811	1	0	
05/04/2002 7:27:21	0.811	1	0	
05/04/2002 7:27:29	4.155	1	0	
05/04/2002 7:27:37	0.709	1	0	
05/04/2002 7:27:45	0.811	1	0	
05/04/2002 7:27:53	0.811	1	0	
05/04/2002 7:28:01	0.709	1	0	
05/04/2002 7:28:09	0.709	1	0	
05/04/2002 7:28:17	3.952	1	0	
05/04/2002 7:28:25	2.736	1	0	
05/04/2002 7:28:33	0.811	1	0	
05/04/2002 7:28:41	389.056	0	0	389.056
05/04/2002 7:28:49	53.306	0	0	53.306
05/04/2002 7:28:57	55.739	0	0	55.739
05/04/2002 7:29:05	51.178	0	0	51.178
05/04/2002 7:29:13	41.247	0	0	41.247

FIGURE 16

With TEMPERATURE Effect

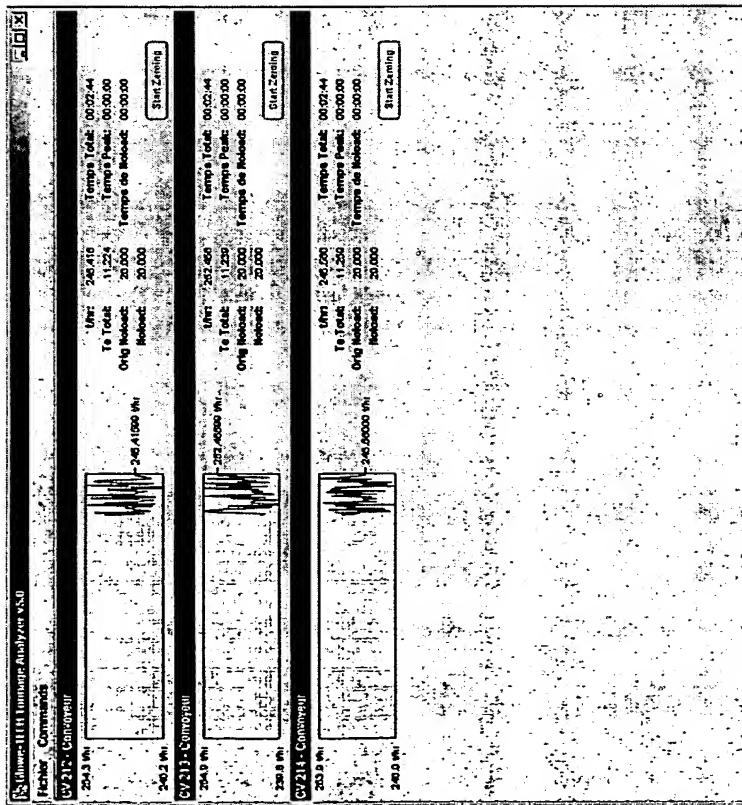
Temperature am	-6.800 Degrees	Celsius	203.846	Feb-13	-19
Temperature pm	-5.700 Degrees	Celsius	222.018	Jan-30	-15
No load kwatt =	12.400		310.794	Apr-03	-6.5 used
Start up kwatts =	21.000				
Time No-Load kwatt	10.000 minutes				
Time Start-Up kwatts	0.000 minutes				
Total Production time	2.058 hours				
Average kwatt for day	1.891 hours				
Average Tonnage by formula	14.018 kwatts				
	310.794 te/hr				
Actual Scale Reading					
Total tonnage by GT analyzer =					
difference					
Time of data Reading	Actual kwatt Reading	Count No-Load	Count Over-load	Conditioned tonnes/hour on conveyor	Tonnes on conveyor
03/04/2003 14:07:38	14.69497	0	0	14.695	361.916
03/04/2003 14:07:46	14.06031	0	0	14.060	314.021
03/04/2003 14:07:54	13.37682	0	0	13.377	262.442
BREAK					
03/04/2003 16:09:46	12.8398	0	0	12.840	221.916
03/04/2003 16:09:54	12.66892	0	0	12.669	209.020
03/04/2003 16:10:02	12.59569	0	0	12.596	203.494
03/04/2003 16:10:10	12.86421	0	0	12.864	223.758
03/04/2003 16:10:18	12.98626	0	0	12.986	232.968
03/04/2003 16:10:26	12.88862	0	0	12.889	225.600
03/04/2003 16:10:34	13.0839	0	0	13.084	240.337
03/04/2003 16:10:42	13.13272	0	0	13.133	244.021
03/04/2003 16:10:50	13.23036	0	0	13.230	251.389
03/04/2003 16:10:58	13.25477	0	0	13.255	253.231





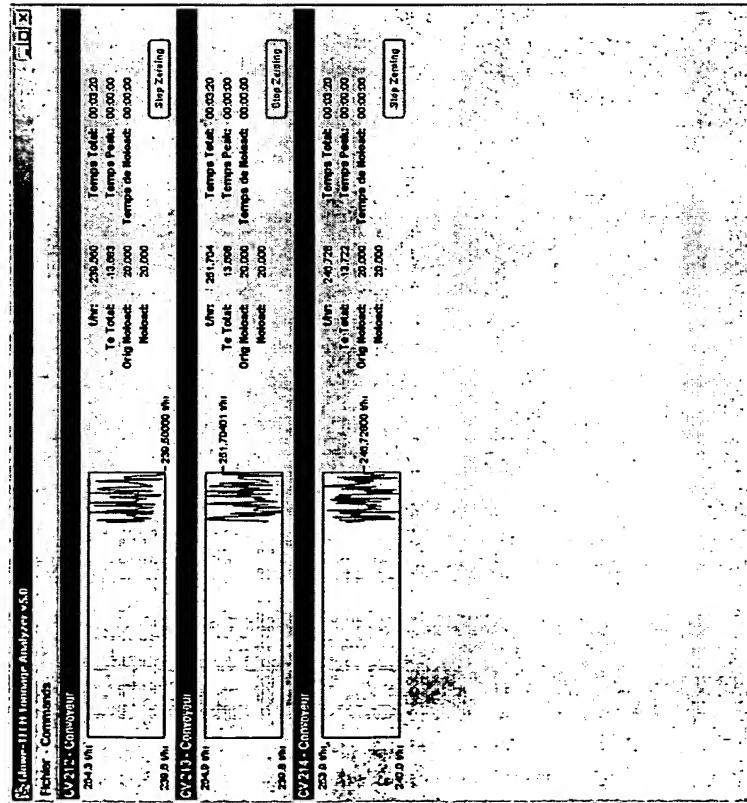
Glowe-Tech Tonnage Analyzer

- Real Time Program showing total tonnage, tph, production time, and No-Load time values



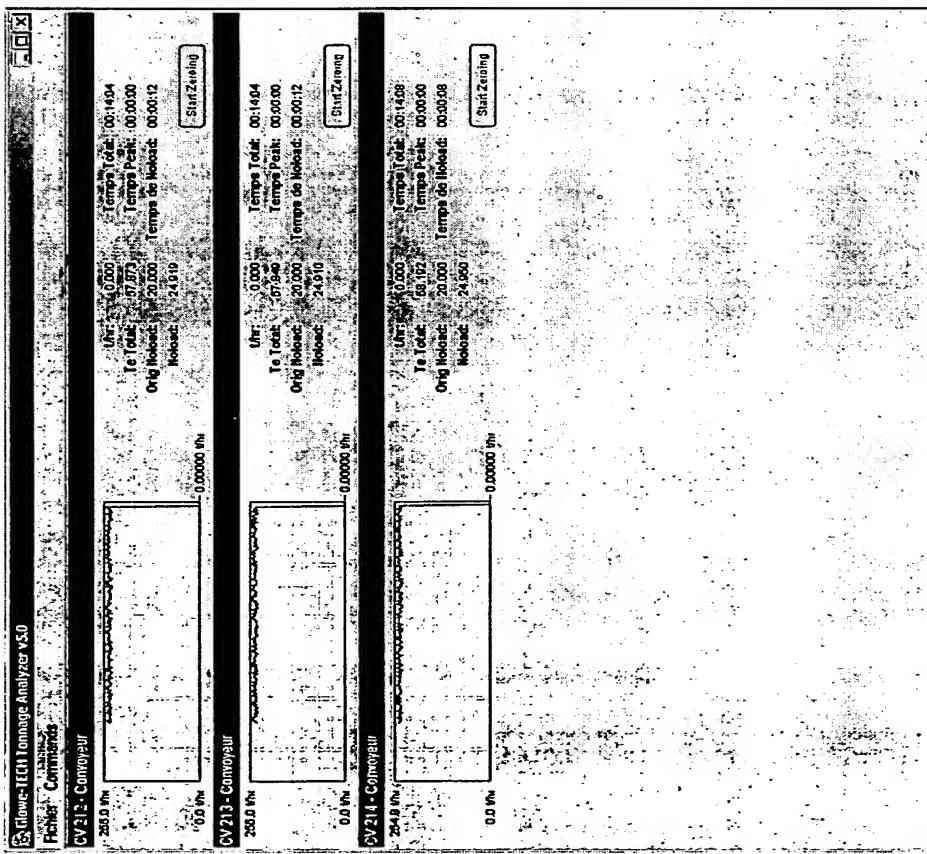
Glowe-Tech Tonnage Analyzer

- Zero test activated as shown in Red



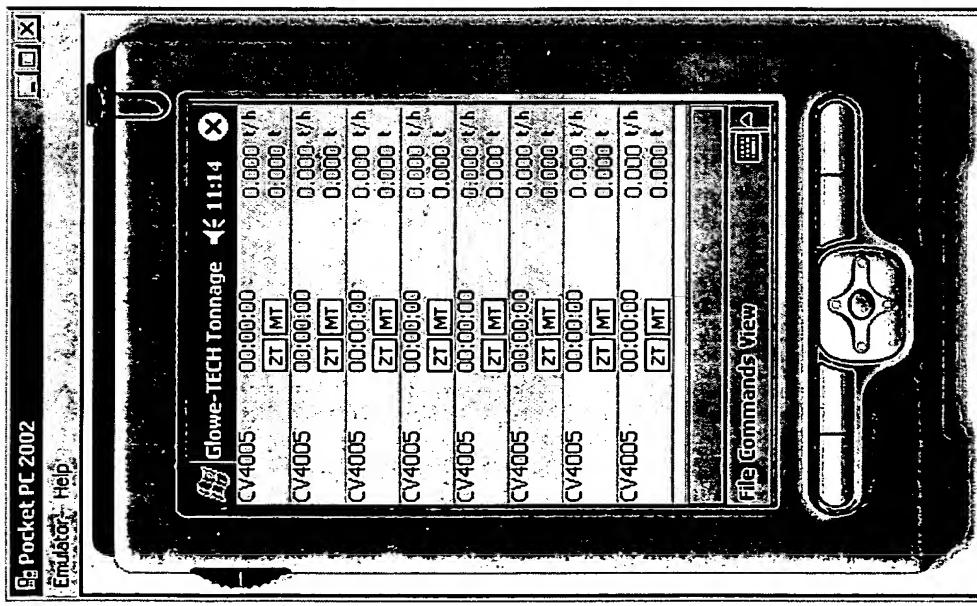
Glowe-Tech Tonnage Analyzer

- Zero test completed and program re-calibrated



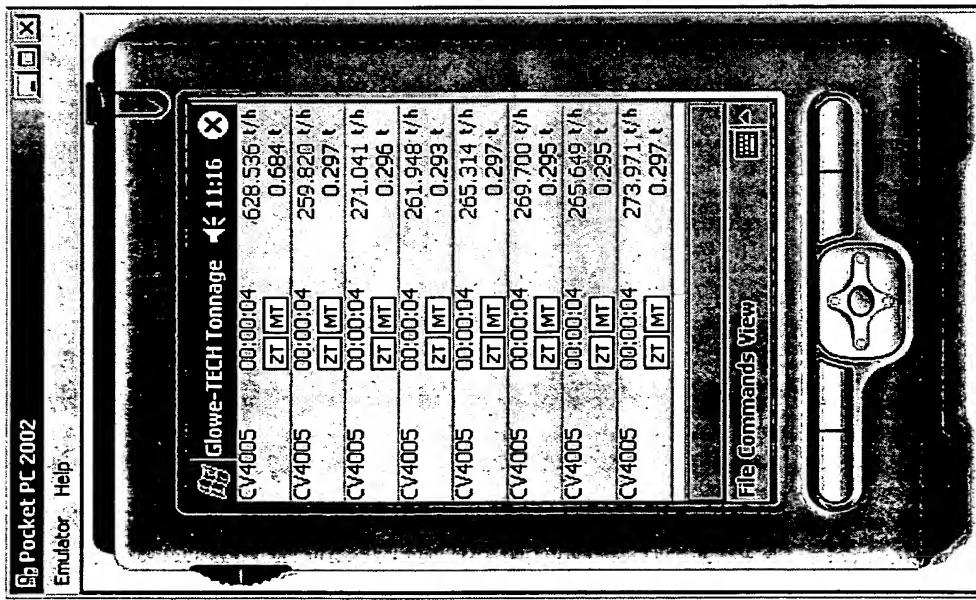
Glowe-Tech Tonnage Analyzer

- Startup showing 8 channels of data display for crusher or conveyors in Real Time mode



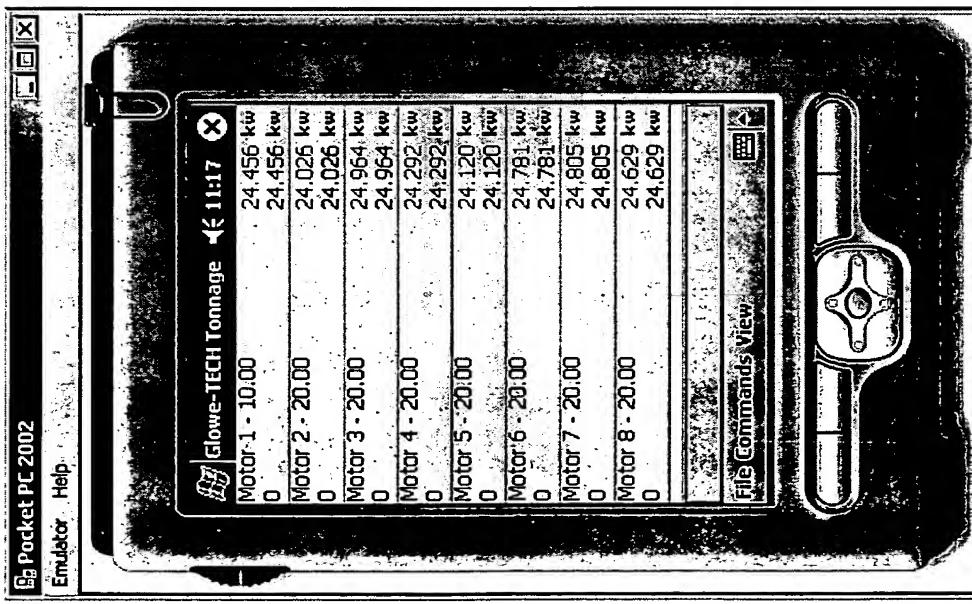
Glowe-Tech Tonnage Analyzer

- Running with tonnage values totalized and shown as tph, updated every second.



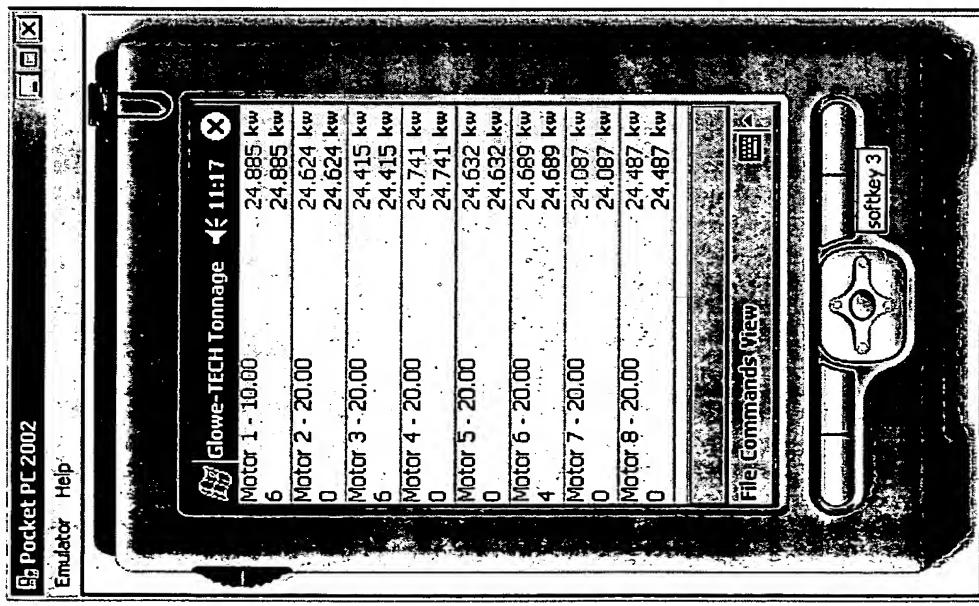
Glowe-Tech Tonnage Analyzer

- Crusher or conveyor
- Motor view with kwatt values displayed prior to Zero Test.



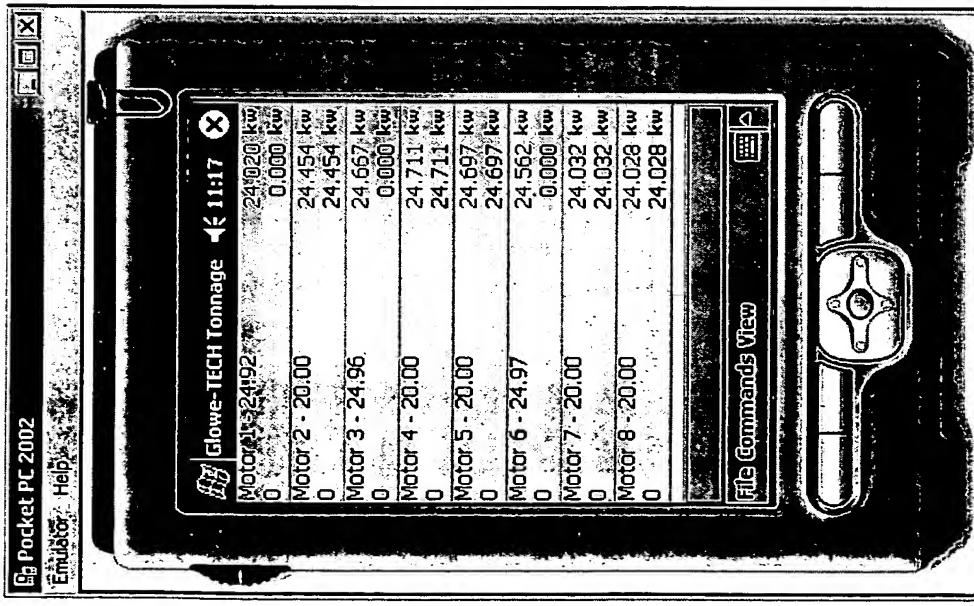
Glowe-Tech Tonnage Analyzer

- Motor view with kwatt values and a zero test in progress for motors 1, 3, and 6



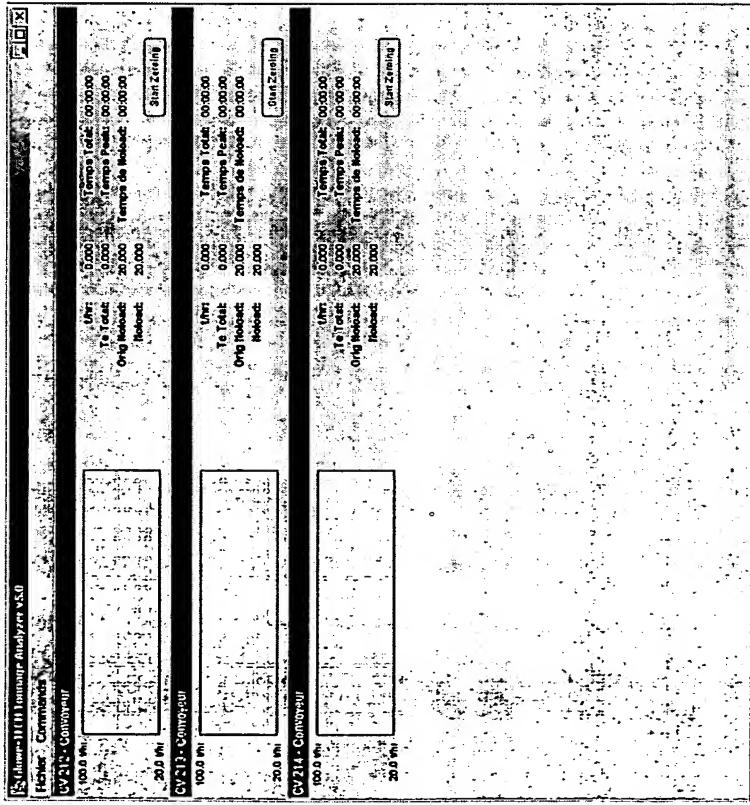
Glowe-Tech Tonnage Analyzer

- Motor view with kwatt values and finished zero tests with new No-load values for motors 1, 3, and 6



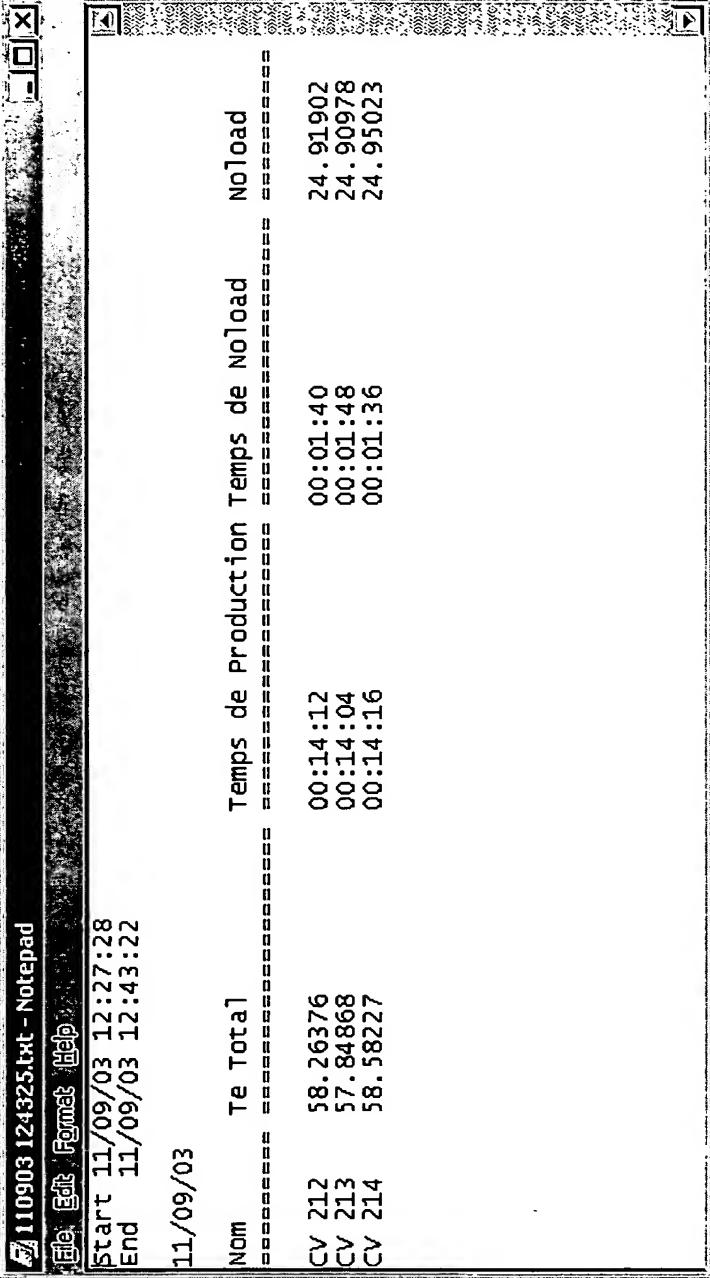
Glowe-Tech Tonnage Analyzer

- Program startup with graphic display of last 20 minutes of data in Real Time.



Glowe-Tech Tonnage Analyzer

- Daily Summary Report including Total tonnage, Production time, No-Load time and new No-load calibration value.



Nom	Te Total	Temps de Production	Temps de NoLoad	NoLoad
CV 212	58.26376	00:14:12	00:01:40	24.91902
CV 213	57.84868	00:14:04	00:01:48	24.90978
CV 214	58.58227	00:14:16	00:01:36	24.95023

Glowe-Tech Tonnage Analyzer

- Screen showing raw data input coming from Data logger with values updated every 1 second with Analog Data Logger and every 4 seconds with ACR Data logger.

